

Application No.: 10/732,724
Art Unit 3752

AMENDMENTS TO THE CLAIMS

1 (Currently amended). A micromechanical dispensing device **(200)** to dispense one or more fluids **(271, 273)** into an atmosphere, the micromechanical dispensing device comprising one or more micromechanical dispensing mechanisms **(210, 212)**, each micromechanical dispensing mechanism of the one or more micromechanical dispensing mechanisms fluidly connected to a corresponding fluid reservoir **(220, 222)**; the micromechanical dispensing device further comprising a micromechanical dispensing device controller **(240)**, the micromechanical dispensing device controller arranged to communicate with each micromechanical dispensing mechanism of the one or more micromechanical dispensing mechanisms, the micromechanical dispensing mechanisms (210, 212) comprising inlets (213, 214) for receiving a fluid to be dispensed, the inlets being fluidly connected to channels (254, 255) that conduct fluid from the fluid reservoirs to the micromechanical dispensing mechanisms (210, 212), the channels (254, 255) further comprising at least one channel port (226, 228) to which the corresponding fluid reservoir (220, 222) is removably, fluidly connected by means of a corresponding fluid reservoir port (223, 225) of the fluid reservoir (220, 222).

Claim 2 (Canceled).

3 (Currently amended). The micromechanical dispensing device **(200)** to dispense one or more fluids **(271, 273)** into an atmosphere of claim 1, wherein at least one micromechanical dispensing mechanism of the one or more micromechanical dispensing mechanisms **(210, 212)** further comprises an electrostatically-driven membrane **(210a)**, an electrostatically-actuated piston **(210b)**, a magnetically-actuated membrane **(210c)**, a thermally-actuated paddle vane **(210e)** or a ballistic aerosol dispensing mechanism **(210d)**.

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4 (Currently amended). The micromechanical dispensing device (200) to dispense one or more fluids (271, 273) into an atmosphere of ~~claim 1~~ claim 5, wherein at least one fluid reservoir (220, 222) contains a fluid, the fluid comprising a perfume, pheromone, moisturizer, humectant, miticide, deodorizer, disinfectant, sanitizing agent or insecticide.

5 (Currently amended). The micromechanical dispensing device (200) to dispense one or more fluids (271, 273) into an atmosphere of claim 1, further comprising a sensor (260), the sensor arranged to form a sensor signal (235) responsive to an atmospheric substance (280), and to communicate the sensor signal (235) to the micromechanical dispensing device controller (240).

6 (Currently amended). The micromechanical dispensing device (200) to dispense one or more fluids (271, 273) into an atmosphere of claim 5, wherein the atmospheric substance (280) is a fluid (271) that has been dispensed by the micromechanical dispensing device (200) to dispense one or more fluids into an atmosphere.

7 (Currently amended). The micromechanical dispensing device (200) to dispense one or more fluids (271, 273) into an atmosphere of claim 5, wherein the micromechanical dispensing device controller (240) is arranged to actuate at least one of the one or more micromechanical dispensing mechanisms (210, 212) in response to the sensor signal (235).

8 (Currently amended). The micromechanical dispensing device (200) to dispense one or more fluids (271, 273) into an atmosphere of ~~claim 1~~ claim 5 further comprising one or more check valves (251, 253), wherein each of the one or more check valves is interposed between a corresponding micromechanical dispensing mechanism (210, 212) from amongst the one or more micromechanical dispensing mechanisms and the corresponding fluid reservoir (220, 222) of the corresponding micromechanical dispensing mechanism.

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Claim 9 (Canceled).

10 (Currently amended). The micromechanical dispensing device (200) to dispense one or more fluids (271, 273) into an atmosphere of claim 1 further comprising an orifice plate (295), the orifice plate comprising an orifice (296), the orifice plate arranged such that at least one fluid of the one or more fluids (271, 273) dispensed by at least one of the one or more micromechanical dispensing mechanisms (210, 212) is further dispensed (271a, 273a) through the orifice.

Claims 11-20 (Canceled).

21 (Currently amended). A micromechanical dispensing device (400) to dispense a plurality of fluids (471, 472, 473) into an atmosphere, the micromechanical dispensing device comprising a plurality of micromechanical dispensing mechanisms (410, 411, 412), each micromechanical dispensing mechanism of the plurality of micromechanical dispensing mechanisms (410, 411, 412) fluidly connected to a corresponding fluid reservoir (420, 421, 422); the micromechanical dispensing device further comprising a micromechanical dispensing device controller (440), the micromechanical dispensing device controller arranged to communicate with each micromechanical dispensing mechanism of the plurality of micromechanical dispensing mechanisms (410, 411, 412), the plurality of micromechanical dispensing mechanisms (410, 411, 412) comprising a plurality of inlets (413, 414, 415) for receiving fluids to be dispensed, the plurality of inlets being fluidly connected to a plurality of channels (454, 455, 456) that conduct fluid from the plurality of fluid reservoirs (420, 421, 422) to the plurality of micromechanical dispensing mechanisms (410, 411, 412), the plurality of channels (454, 455, 456) further comprising channel ports (426, 427, 428) to which the corresponding fluid reservoirs (420, 421, 422) are removably, fluidly connected by means of corresponding fluid reservoir ports (423, 424, 425) of the respective fluid reservoirs (420, 421, 422).

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Claim 22 (cancelled).

23 (Currently amended). The micromechanical dispensing device (400) to dispense a plurality of fluids (471, 472, 473) into an atmosphere of claim 21, wherein at least one micromechanical dispensing mechanism of the plurality of micromechanical dispensing mechanisms (410, 411, 412) further comprises an electrostatically-driven membrane (410a, 411a), an electrostatically-actuated piston (410b, 411b), a magnetically-actuated membrane (410c, 411c), a thermally-actuated paddle vane (410e, 411e) or a ballistic aerosol dispensing mechanism (410d, 411d).

24 (Currently amended). The micromechanical dispensing device (400) to dispense a plurality of fluids (471, 472, 473) into an atmosphere of ~~claim 21~~ claim 25, wherein at least one fluid reservoir (420, 421, 422) contains a fluid (471, 472, 473), the fluid comprising a perfume, pheromone, moisturizer, humectant, miticide, deodorizer, disinfectant, sanitizing agent or insecticide.

25 (Currently amended). The micromechanical dispensing device (400) to dispense a plurality of fluids (471, 472, 473) into an atmosphere of claim 21, further comprising a sensor (460), the sensor arranged to form a sensor signal (435) responsive to an atmospheric substance (480) and to communicate the sensor signal (435) to the micromechanical dispensing device controller (440).

26 (Currently amended). The micromechanical dispensing device (400) to dispense a plurality of fluids (471, 472, 473) into an atmosphere of claim 25, wherein the atmospheric substance (480) to which the sensor signal (435) is responsive is a fluid that has been dispensed by the micromechanical dispensing device (400) to dispense a plurality of fluids (471, 472, 473) into an atmosphere.

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27 (Currently amended). The micromechanical dispensing device (400) to dispense a plurality of fluids (471, 472, 473) into an atmosphere of claim 25, wherein the micromechanical dispensing device controller (440) is arranged to at least one of the plurality of micromechanical dispensing mechanisms (410, 411, 412) in response to the sensor signal (435).

28 (Currently amended). The micromechanical dispensing device (400) to dispense a plurality of fluids (471, 472, 473) into an atmosphere of ~~claim 24~~ claim 25 further comprising at least one check valve (451, 452, 453) interposed between at least one of the plurality of micromechanical dispensing mechanisms (410, 411, 412) and its corresponding fluid reservoir (420, 421, 422).

Claim 29 (Canceled).

30 (Currently amended). The micromechanical dispensing device (400) to dispense a plurality of fluids (471, 472, 473) into an atmosphere of claim 21 further comprising an orifice plate (495), the orifice plate comprising an orifice (496), the orifice plate arranged such that at least one fluid of the plurality of fluids (471, 472, 473) dispensed by at least one of the plurality of micromechanical dispensing mechanisms (410, 411, 412) is further dispensed (471a, 472a, 473a) through the orifice (496).

Claims 31-39 (Canceled).

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40 (Withdrawn--currently amended). A micromechanical dispensing device (600) to dispense one or more fluids (671, 672, 673) into an atmosphere, the micromechanical dispensing device comprising a micromechanical dispensing mechanism (610), the micromechanical dispensing mechanism (610) fluidly connected to a plurality of fluid reservoirs (620, 621, 622); and further comprising a valve (665), the valve arranged to selectively couple each fluid reservoir of the plurality of fluid reservoirs (620, 621, 622) to the micromechanical dispensing mechanism (610); and, the micromechanical dispensing device further comprising a micromechanical dispensing device controller (640), the micromechanical dispensing device controller arranged to communicate with the micromechanical dispensing mechanism (610) and the valve (665).

41 (Withdrawn--currently amended). The micromechanical dispensing device (600) to dispense one or more fluids (671, 672, 673) into an atmosphere of claim 40, wherein the micromechanical dispensing mechanism (610) further comprises an electrostatically-driven membrane (610a), an electrostatically-actuated piston (610b), a magnetically-actuated membrane (610c), a thermally-actuated paddle vane (610e) or a ballistic aerosol dispensing mechanism (610d).

42 (Withdrawn--currently amended). The micromechanical dispensing device (600) to dispense one or more fluids (671, 672, 673) into an atmosphere of claim 40, wherein at least one fluid reservoir (620, 621, 622) contains a fluid (671, 672, 673), the fluid comprising a perfume, pheromone, moisturizer, humectant, miticide, deodorizer, disinfectant, sanitizing agent or insecticide.

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43 (Withdrawn--currently amended). The micromechanical dispensing device (600) to dispense one or more fluids (671, 672, 673) into an atmosphere of claim 40, further comprising a sensor (660), the sensor arranged to form a sensor signal (636) responsive to an atmospheric substance (680) and to communicate the sensor signal (636) to the micromechanical dispensing device controller (640), and the micromechanical dispensing device controller (640) is arranged to actuate the micromechanical dispensing mechanism (610) in response to the sensor signal (636).

44 (Withdrawn--currently amended). The micromechanical dispensing device (600) to dispense one or more fluids (671, 672, 673) into an atmosphere of claim 40 further comprising a mixing chamber (670), the mixing chamber fluidly interposed between the micromechanical dispensing mechanism (610) and the plurality of fluid reservoirs (620, 621, 622).

45 (Withdrawn--currently amended). A micromechanical dispensing device (700) to dispense a fluid (771) into an atmosphere the micromechanical dispensing device comprising a plurality of micromechanical dispensing mechanisms (710, 711, 712), the plurality of micromechanical dispensing mechanisms fluidly connected to a fluid reservoir (720); and, the micromechanical dispensing device further comprising a micromechanical dispensing device controller (740), the micromechanical dispensing device controller arranged to communicate with the plurality of micromechanical dispensing mechanisms (710, 711, 712).

46 (Withdrawn--currently amended). The micromechanical dispensing device (700) to dispense a fluid (771) into an atmosphere of claim 45, further comprising a port (726) to which the fluid reservoir (720) may be removably, fluidly connected.

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47 (Withdrawn--currently amended). The micromechanical dispensing device (700) to dispense a fluid (771) into an atmosphere of claim 45, wherein at least one micromechanical dispensing mechanism (710, 711, 712) further comprises an electrostatically-driven membrane (710a, 711a), an electrostatically-actuated piston (710b, 711b), a magnetically-actuated membrane (710c, 711c), a thermally-actuated paddle vane (710e, 711e) or a ballistic aerosol dispensing mechanism (710d, 711d).

48 (Withdrawn--currently amended). The micromechanical dispensing device (700) to dispense a fluid (771) into an atmosphere of claim 45, wherein the fluid reservoir contains a fluid (771), the fluid comprising a perfume, pheromone, moisturizer, humectant, miticide, deodorizer, disinfectant, sanitizing agent or insecticide.

49 (Withdrawn--currently amended). The micromechanical dispensing device (700) to dispense a fluid (771) into an atmosphere of claim 45, further comprising a sensor (760), the sensor arranged to form a sensor signal (735) responsive to an atmospheric substance (780) and to communicate the sensor signal to the micromechanical dispensing device controller (740), and the micromechanical dispensing device controller (740) [[,]] is arranged to actuate the plurality of micromechanical dispensing mechanisms (710, 711, 712) in response to the sensor signal (735).